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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,665	03/13/2007	Thomas Giering	GIER3006/JJC/BEL	7734
23364 7590 01/25/2011 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314-1176				
EXAMINER EDWARDS, PATRICK L				
ART UNIT		PAPER NUMBER		
2624				
MAIL DATE		DELIVERY MODE		
01/25/2011		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/574,665

Applicant(s)

GIERING, THOMAS

Examiner

Patrick L. Edwards

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☒ Claim(s) 1-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-942)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Rejections and Objections based on indefiniteness issues:

Applicant notes (Remarks at 9) the amendments made for the purpose of addressing indefiniteness issues.

Regarding claim 1: indefiniteness issues are still present in claim 1 despite the amendment to the claim. They will be included below.

The amended claim 1 recites "the illumination apparatus, the sensor device, and the evaluation unit are arranged to allow capturing of a plurality of measured values of luminescent radiation ..."

How is it that a measured value is captured? A limitation of "capturing measured values" could potentially make sense if the subject matter was directed to a sensor that was capturing an image of a piece of paper that included measured values written on it. The Examiner, however, is fairly confident that this is not the idea Applicant is going after.

Rather, in the context of this application, the recitation of "capturing measured values" simply doesn't make any sense. The specification speaks in terms of capturing luminescence radiation, which does make sense. **Signals are captured, the intensity of those signals is determined, and this intensity then becomes a measured value.** The problem with the claim may simply be attributable to "capturing" being a poor verb choice for that particular portion of the claim. However, this is merely an observation from the Examiner, and is not meant to be interpreted as a required instruction for how to amend the claim. It is of course the Applicant's right to define the claims as he sees fit, and the Applicant is free to draft the claims in whatever manner the Applicant wishes. Applicant's claim drafting liberties are of course bounded by the requirements of 35 U.S.C 112(2) and 37 CFR 1.75. Applicant is respectfully reminded to remain cognizant of these guiding principles for any and all future amendments.

Further referring to claim 1, the phrase "which is obtained by integrating the measured values of the respective measuring track" is indefinite. The claim previously indicates that the measured values come not from a single track, but "along each one of a plurality of measuring tracks...". So the singular recitation of a "track" is indefinite. Which track? Just one of the plurality?

Further, what exactly is meant by "respective track"? The term respective is used only when refer to plural objects or subjects. What then is meant by the term "the respective measuring track"?

Several of the claims include the phrase "the respective measuring track". The above paragraph applies to each and every recitation of this phrase throughout the claims.

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Regarding independent 19, the above discussion with respect to claim 1 is incorporated herein where appropriate.

Regarding claim 3, Applicant's arguments have been fully considered and are persuasive.

Regarding claim 7, Applicant's arguments have been fully considered and are persuasive.

Regarding claim 8, Applicant's arguments have been fully considered and are persuasive.

Regarding claim 9, Applicant's arguments have been fully considered and are persuasive.

Regarding claim 10: indefiniteness issues are still present in the claim. How is the illumination a continuous illumination if there are a plurality of pulses? This is inconsistent with the plain meaning of the words and also with paragraph [0022] of Applicant's specification, which specifies that continuous illumination and pulsed illumination are different operations.

Regarding claim 20, the above analysis with respect to claim 10 also applies to claim 20.

Regarding claim 11, Applicant's arguments have been fully considered and are persuasive.

Regarding claim 12, Applicant's arguments have been fully considered and are persuasive.

Regarding claim 14, Applicant's arguments have been fully considered and are persuasive.

Regarding claims 16 and 20, the amendments have not sufficiently clarified the claim. These claims are still indefinite.

Regarding claim 16, the metes and bounds of the term "about 800 nanometers" are not clear. How close is about?

Regarding claim 20, the amendment does little to clarify the metes and bounds of the claim. The Examiner still has no idea what this claim is intended to convey. The scope of the claim is entirely obfuscated by the awkward language of the claims and the existence of partially alternative limitations. Simply stated, it is still a very confusing claim.

Regarding claim 17: indefiniteness issues are still present in the claim. How is it possible for an apparatus to comprise either a nominal value sensor and a state sensor? The word "either", when used vis a vis the word "both", means "one or the other of two". To briefly illustrate, a statement to the effect of "The best Quarterback in the SEC is either Tyler Bray and Aaron Murray" simply doesn't make any sense. The problem here should be pretty apparent and so the examiner will not beat a dead horse with multiple examples.

Regarding the claims where the amendment has clarified the prior indefiniteness or the claims not mentioned at all: these claims are still subject to indefiniteness rejections and objections because the indefiniteness of the parent claim trickles down and touches all of the claims that depend therefrom.

Please note that the above analysis shall be incorporated into the below rejections.

Rejections based on prior art:

Applicant's Argument:

Referring to claim 1, Applicant alleges that the proposed combination of Guter and Okamura does not teach or suggest the capturing of a plurality of luminescent radiation values along each measuring track.

Examiner's Response:

Applicant is respectfully reminded that claims are given their broadest reasonable interpretation. This is the claim construction standard that the Federal Circuit has mandated be used by the USPTO in the interpretation of claims. The Applicant argues that Guter does not disclose the measurement of luminescent radiation. What, then, does the Applicant wish the term "luminescent radiation" to be limited to?

The Specification states that "a luminescent feature substance is a substance consisting of one single component or of a mixture of a plurality of components, which show a luminescence behavior. These features substances, which, e.g., can be present in the form of pigments, are contained in the document of value itself and/or applied thereon. Such documents of value can be, e.g., bank notes, checks, chip cards, ID documents, passports, or the like." The Examiner respectfully submits that the soil or accumulated dirt on a bank note qualifies as such a feature substance in that these substances are used to determine an amount of luminescence behavior (The spectral component of emitted radiation which is most favourable for judging the degree of dirt accumulation (See Guter col. 3 lines 50-55)) and that Guter discloses reflectance as a method for making this determination (See Guter col. 2 lines 65-69).

In view of the above, the Examiner asserts that the rejection is proper as it currently stands with Guter and Okamura. However, even if we were to assume for the sake of argument that the combination of Guter and Okamura was deficient with respect to this limitation, it would have been obvious to a person having reasonable skill in the art at the time of the invention – in view of a veritable plethora of well known prior art such as the admitted prior art discussed in the background of Applicant's disclosure or U.S.P.N. 6,974,623 to Schwenk, and various other references describing this well known technique -- to modify the radiation sensing method and apparatus of Guter by specifying that the radiation to be sensed is Luminescence radiation emitted by a luminescent feature substance.

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Applicant's Argument:

Again referring to claim 1, Applicant alleges that the proposed combination of Guter and Okamura does not disclose or suggest a measurement of luminescence radiation along a plurality of measuring tracks as required by amended claim 1.

Examiner's Response:

Applicant's argument has been fully considered but is unpersuasive. Please see Guter col. 1 lines 65-67 and the clear disclosure of "a track extending parallel in relation to the longitudinal edge of the bank note."

Applicant's Argument:

Additionally referring to claim 1, Applicant also alleges that a skilled person would not combine Guter and Okamura. As discussed above, Guter is directed to determining the amount of dirt which has accumulated on a bank note

Examiner's Response:

Applicant's arguments have been fully considered but are unpersuasive. A person having ordinary skill in the art at the time of the invention with ordinary common sense and ingenuity would have had reasons to combine the cited references to come up with the combined system. The Examiner respectfully submits that the reasons described in the previous office action are well articulated and, in fact, go above and beyond what the law requires for establishing the propriety of the combinability of a plurality of references in an obviousness rejection.

Applicant's Argument:

Additionally referring to claim 1, Applicant also alleges Okamura only discloses the use of a single scanning area, not plural scanning areas.

Examiner's Response:

Applicant's attention is respectfully directed to Okamura col. 8 lines 5-6 which states "Preliminary scanning areas T and T' are shown by way of example in Figure 3". Applicant's factual assertion is incorrect and the argument that depends on this incorrect factual assertion is therefore unpersuasive.

Applicant's Argument:

At page 12 of Applicant's remarks, Applicant argues that "Hirasawa is incompatible with Guter because Guter merely discloses measuring light passing through the document.

Examiner's Response:

Applicant's attention is respectfully directed to Guter col. 2 lines 65-69, which has already been referenced above. Again, applicant's factual assertion is incorrect and the argument that depends on this incorrect factual assertion is therefore unpersuasive.

Applicant's Argument:

At page 14 of Applicant's remarks, Applicant directs arguments to the Bergstrom reference, but fails to address the features of the claim that Bergstrom was brought in to teach.

Examiner's Response:

Applicant's argument is unpersuasive.

Claim Objections - 37 CFR § 1.75

1. The following sections of 37 CFR §1.75(a) and (d)(1) are the basis of the following objection:
 - (a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.
 - (d)(1) The claim or claims must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.
2. Claims 1-23 are objected to under 37 CFR §1.75(a) and (d)(1) as failing to particularly point out and distinctly claim the subject matter that the applicant regards as the invention.

Please see the above response to arguments section regarding indefiniteness issues. That discussion is incorporated herein.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Please see the above response to arguments section regarding indefiniteness issues. That discussion is incorporated herein.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 6-7, 10, 15, 17-19, and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,189,235 ("Guter") in view of USPN 7,426,291 ("Okamura")

Regarding claims 1 and 19, Guter discloses:

- An apparatus for checking of documents of value with luminescent feature substances [Guter describes checking bank-notes, which are documents of value and which includes "luminescent feature substances" as they are described in the instant application (i.e. a substance consisting of one single component or of a mixture of a plurality of components, which show a luminance behavior). Indeed, it is difficult to envision a bank-note that lacked "luminescent feature substances".].
- illuminating apparatus for illuminating the document of value [see Figures 1 and 2].
- a sensor device for measuring the luminescence radiation emitted by the illuminated document of value [See reference to "sensor unit 10" throughout the Guter specification].
- an evaluation unit for carrying out the checking on the basis of the measured values of the sensor device [See col. 5, line 54].

- At least one measuring track along with a plurality of measured values of the luminescence radiation are captured, said track extending transversely across the document of value [See col. 1, lines 63-69: "...by means of a transmit unit containing a light source, various areal units are continuously illuminated along a track extending parallel in relation to the longitudinal edge of the bank note". A track extending parallel in relation to a longitudinal edge extends transversely.].
- wherein the evaluation unit is arranged to carry out the evaluation on the basis of an integrated luminescence measuring, which is obtained by integrating the measured values of the respective measuring track [See the function performed by the integrator 30 of Guter, described, for example, at col. 5, lines 54-62].

As discussed above, Guter discloses a single measuring track and thus fails to expressly disclose a plurality of measuring tracks extending transversely across the document of value. Okumura, on the other hand, discloses capturing data along a plurality of measuring tracks extending transversely across the document [See Okamura Figure 3 with specific reference to T and T'].

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Guter by adding additional measuring strips as taught by Okamura. Such a modification would have allowed for the consideration of more luminescence information and therefore resulted in a more robust document checking apparatus.

Regarding claim 2, which depends from claim 1, Guter discloses:

An evaluation unit is arranged to obtain the integration of the measured values by an addition of a plurality of discrete measured values of the luminescence radiation [See Guter col. 5, lines 54-62].

Regarding claim 3, which depends from claim 1, Guter discloses

An evaluation unit arranged to carry out the evaluation both on the basis of the integrated luminescence measuring, and not-integrated measured values of the luminescence radiation corresponding to different spatial areas of the respective measuring track [See Guter col. 5, lines 54-62].

Notwithstanding the indefiniteness issues discussed above with respect to this claim, if the claim were interpreted as requiring that the evaluation is carried out on the basis of not-integrated corresponding to different spatial areas of a measuring track, this limitation is not expressly disclosed in Guter but is disclosed in Okamura [See Okamura col 8 - col. 9 and elsewhere throughout the Okamura disclosure where evaluation is performed on the basis of not-integrated measured values of luminescence radiation which correspond to different spatial areas of the respective measuring tracks T and T'].

It would have been obvious to a person having ordinary skill in the art at the time of the invention to add in a method of looking at specific spatial areas of a measured track rather than merely the integrated values of the entire track. Such a modification would have allowed for a more robust system operable to make determinations regarding documents of value on the basis of various characteristics of those documentns.

Regarding claim 6, which depends from claim 1, Guter further discloses an apparatus is arranged to check documents of value having different luminescent feature substances which are contained individually or in combination in the document of value, and the evaluation unit is adapted as to be able to determine either or both of whether one of the different feature substances is contained in the checked document of value and which of the different feature substances is contained in the checked document of value [See Guter generally]. Furthermore, Okamura describes this limitation as well [See Okamura generally].

Regarding claim 7, which depends from claim 1, Guter further discloses a transport apparatus for transporting past the illuminating apparatus and the sensor device, and the sensor device is arranged to carry out the integrated luminescence measuring along a track extending in transport direction [Guter col. 3 lines 28-29].

Regarding claim 8, which depends from claim 1, the combination of Guter and Okamura disclose a sensor device adapted to measure along a plurality of parallel tracks which either or both overlap each other and are spaced-apart from each other [See, e.g., Okamura Figure 3].

Regarding claim 10, which depends from claim 1, the combination of Guter and Okamura disclose that the illuminating apparatus produces a continuous illumination [Guter col. 1, lines 65-67].

Regarding claim 15, which depends from claim 1, the combination of Guter and Okamura discloses a time-resolved evaluation of the integrated luminescence measuring [See Guter col. 7, lines 7-12: The short flashes from the LEDs is a time-resolved evaluation.].

Regarding claim 17, which depends from claim 1, Gutter discloses a state sensor that checks the state of the document of value (i.e., Gutter determines whether the document is in a state of suitability for continued circulation).

Regarding claim 18, which depends from claim 1, the combination of Guter and Okamura disclose a device for depositing and paying out bank notes [See Okamura, Background].

Regarding claims 21 and 22, , the combination of Guter and Okamura disclose a sensor device adapted to measure along a plurality of parallel tracks which are spaced-apart from each other [See, e.g., Okamura Figure 3].

7. Claims 4, 5, 12, and 16 are rejected under 35 USC 103 as being unpatentable over the combination of Guter and Okamura as applied above with respect to independent claim 1, and further in view of USPN 6,741,727 ("Hirasawa").

Regarding claim 4, which depends from claim 1, the combination of Guter and Okamura fails to expressly disclose performing a broadband evaluation of the spectral distribution of the integrated luminescence measuring.

Hirasawa, on the other and, does disclose an evaluation unit which arranged to carry out a broadband evaluation of the spectral distribution of the integrated luminescence measuring [See Hirasawa col. 5 line 55 - col. 6 line 35, which describes carrying out a broadband evaluation of the spectral distribution of measured luminescence values.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Guter by adding an evaluation of the spectral distribution of measured luminescence values. Such a modification would have allowed for an additional way of determining characteristics of a document of value.

Regarding claim 5, which depends from claim 1, all of the limitations are discussed in the above discussion with respect to claim 4.

Regarding claim 12, which depends from claim 1, the combination of Guter and Okamura discloses a sensor device that carries out a value measurement integration operation along a track direction. The combination of Guter and Okamura, however, fails to expressly disclose that the integration is of spectral values.

Hirasawa, on the other hand, discloses using infrared radiation to measure the reflectance values and thus discloses making the determination on the basis of spectral characteristics [See Hirasawa col. 5 line 40 - col. 7 line 20 & col. 10 lines 20-35].

Regarding claim 16, Hirasawa discloses performing an evaluation in a wavelength range over 800nm [See Hirasawa col. 5 lines 55-60].

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Guter and Okamura as applied above with respect to independent claim 1, and further in view of USPN 6,636,624 ("Rateman").

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Notwithstanding the proper rejection of claim 7 in view of the indefiniteness issues raised above and the consequent claim interpretation, this claim, if amended to remove the indefiniteness problem, would still be obvious in view of the aforesaid combination. Raterman discloses measuring tracks which are parallel to the transport direction of the document [See Figures 1(a)-1(c) of Raterman and the accompanying description]. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination of Guter and Okamura by adding in that the measuring tracks are parallel to the transport direction as taught by Raterman. Such a modification would have allowed for the documents to be transported in either direction, which makes a more robust document-checking system.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Guter and Okamura as applied above with respect to independent claim 1, and further in view of EP 0 744 716 A2 ("Cummings").

The combination of Guter and Okamura fails to expressly disclose using a plurality of sensors, with each sensor being adapted to measure one individual track. Cummings, on the other hand, discloses this limitation [See Cummings col. 2, lines 16-30].

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination of Guter and Okamura by adding plural sensors corresponding to plural tracks as taught by Cummings. Such a modification would have allowed for a faster document checking system in that different areas of the document could be sensed simultaneously.

10. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Guter and Okamura as applied above with respect to claim 1, and further in view of USPN 6,974,623 ("Schwenk").

The combination of Guter and Okamura fails to expressly disclose a sensor device which comprises a plurality of sensors which have different spectral behaviors and the illuminating apparatus comprises a plurality of light sources which have different spectral behaviors. Schwenk, on the other hand, discloses a sensor with both light sources and sensors and having different spectral behaviors [See Schwenk col. 5, lines 33-59].

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination of Guter and Okamura by adding in a sensor that both emitted and sensed with different spectral behaviors. Such a modification would have resulted in document checking apparatus that could properly detect different types of mottled fibre types in a document.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Guter and Okamura as applied above with respect to independent claim 1, and further in view of GB 2122743A ("Bergstrom").

The combination of Guter and Okamura fail to expressly disclose a spatially-resolved evaluation of the integrated luminescence measuring. Bergstrom, on the other hand, explicitly describes a spatially-resolved evaluation (see Bergstrom pg. 2, lines 66-105).

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination of Guter and Okamura by performing a spatially-resolved evaluation as taught by Bergstrom. Such a modification would have allowed a well-known method of checking a document of value.

12. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Guter and Okamura as applied above with respect to independent claim 1, and further in view of USPN 5,652,802 to Graves et al. ("Graves").

Both claims 8 and 9 disclose that the measuring tracks are overlapping. This feature is not expressly disclosed in the aforesaid combination of Guter and Okamura, but is expressly described at, for example, col. 12 lines 50-62 of Graves. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination of Guter, Okamura, and Schwenk by having the measuring tracks overlap as taught by Graves. Such a modification would have allowed for the scanning operation to cover more surface area of the bank note.

13. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Guter, and Okamura as applied above with respect to claim 1 and further in view of USPN 4,451,521 to Kaule et al. ("Kaule").

The aforesaid combination fails to expressly disclose an evaluation unit that measures in the range of over 1000 nanometers. Kaule on the other hand, does disclose this feature. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the aforesaid combination to include measuring infrared wavelengths as taught by Kaule. Such a modification would have allowed for

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conspicuous advantages in detecting the authenticity of banknotes with certain combinations of paper and ink (See Kaule col. 5 lines 56-67).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 1-3, 6-7, 10, 14, 15, 17-19, and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of USPN 4,189,235 ("Guter"), USPN 7,426,291 ("Okamura"), and USPN 6,974,623 to Gerhard Schwenk ("Schwenk")

Regarding claims 1 and 19, Guter discloses:

- An apparatus for checking of documents of value with luminescent feature substances [Guter describes checking bank-notes, which are documents of value and which includes "luminescent feature substances" as they are described in the instant application (i.e. a substance consisting of one single component or of a mixture of a plurality of components, which show a luminescence behavior). Indeed, it is difficult to envision a bank-note that lacked "luminescent feature substances".].
- illuminating apparatus for illuminating the document of value [see Figures 1 and 2].
- a sensor device for measuring the luminescence radiation emitted by the illuminated document of value [See reference to "sensor unit 10" throughout the Guter specification].
- an evaluation unit for carrying out the checking on the basis of the measured values of the sensor device [See col. 5, line 54].
- At least one measuring track along with a plurality of measured values of the luminescence radiation are captured, said track extending transversely across the document of value [See col. 1, lines 63-69: "...by means of a transmit unit containing a light source, various areal units are continuously illuminated along a track extending parallel in relation to the longitudinal edge of

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the bank note". A track extending parallel in relation to a longitudinal edge extends transversely.].

- wherein the evaluation unit is arranged to carry out the evaluation on the basis of an integrated luminescence measuring, which is obtained by integrating the measured values of the respective measuring track [See the function performed by the integrator 30 of Guter, described, for example, at col. 5, lines 54-62].

As discussed above, Guter discloses a single measuring track and thus fails to expressly disclose a plurality of measuring tracks extending transversely across the document of value. Okumura, on the other hand, discloses capturing data along a plurality of measuring tracks extending transversely across the document [See Okamura Figure 3 with specific reference to T and T'].]

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Guter by adding additional measuring strips as taught by Okamura. Such a modification would have allowed for the consideration of more luminescence information and therefore resulted in a more robust document checking apparatus.

The combination of Guter and Okamura does not expressly recte measuring luminescent radiation in the determination of bank note authenticity. Schwenk, on the other hand, does disclose this feature, which was, incidentally, a feature that was well known and widely practiced in the art at the time of the invention. Such a modification would have allowed for a measuring technique with an improved signal to noise ration (See Schwenk col. 2 lines 30-33).

Regarding claim 2, which depends from claim 1, Guter discloses:

An evaluation unit is arranged to obtain the integration of the measured values by an addition of a plurality of discrete measured values of the luminescence radiation [See Guter col. 5, lines 54-62].

Regarding claim 3, which depends from claim 1, Guter discloses

An evaluation unit arranged to carry out the evaluation both on the basis of the integrated luminescence measuring, and not-integrated measured values of the luminescence radiation corresponding to different spatial areas of the respective measuring track [See Guter col. 5, lines 54-62].

Notwithstanding the indefiniteness issues discussed above with respect to this claim, if the claim were interpreted as requiring that the evaluation is carried out on the basis of not-integrated corresponding to different spatial areas of a measuring track, this limitation is not expressly disclosed in Guter but is disclosed in Okamura [See Okamura col 8 - col. 9 and elsewhere throughout the Okamura disclosure where evaluation is performed on the basis of not-integrated measured values of luminescence radiation which correspondn to different spatial areas of the respective measuring tracks T' and T''].]

It would have been obvious to a person having ordinary skill in the art at the time of the invention to add in a method of looking at specific spatial areas of a measured track rather than merely the integrated values of the entire track. Such a modification would have allowed for a more robust system operable to make determinations regarding documents of value on the basis of various characteristics of those documentns.

Regarding claim 6, which depends from claim 1, Guter further discloses an apparatus is arranged to check documents of value having different luminescent feature substances which are contained individually or in combination in the document of value, and the evaluation unit is adapted as to be able to determine either or both of whether one of the different feature substances is contained in the checked document of value and which of the different feature substances is contained in the checked document of value [See Guter generally]. Furthermore, Okamura describes this limitation as well [See Okamura generally].

Regarding claim 7, which depends from claim 1, Guter further discloses a transport apparatus for transporting past the illuminating apparatus and the sensor device, and the sensor device is arranged to carry out the integrated luminescence measuring along a track extending in transport direction [Guter col. 3 lines 28-29].

Regarding claim 10, which depends from claim 1, the combination of Guter and Okamura disclose that the illuminating apparatus produces a continuous illumination [Guter col. 1, lines 65-67].

The combination of Guter and Okamura fails to expressly disclose a sensor device which comprises a plurality of sensors which have different spectral behaviors and the illuminating apparatus comprises a plurality of light sources which have different spectral behaviors. Schwenk, on the other hand, discloses a sensor with both light sources and sensors and having different spectral behaviors [See Schwenk col. 5, lines 33-59].

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination of Guter and Okamura by adding in a sensor that both emitted and sensed with different spectral behaviors. Such a modification would have resulted in document checking apparatus that could properly detect different types of mottled fibre types in a document

Regarding claim 15, which depends from claim 1, the combination of Guter and Okamura discloses a time-resolved evaluation of the integrated luminescence measuring [See Guter col. 7, lines 7-12: The short flashes from the LEDs is a time-resolved evaluation.].

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Regarding claim 17, which depends from claim 1, Gutter discloses a state sensor that checks the state of the document of value (i.e., Gutter determines whether the document is in a state of suitability for continued circulation).

Regarding claim 18, which depends from claim 1, the combination of Guter and Okamura disclose a device for depositing and paying out bank notes [See Okamura, Background].

Regarding claims 21 and 22, , the combination of Guter, Okamura, and Schwenk disclose a sensor device adapted to measure along a plurality of parallel tracks which are spaced-apart from each other [See, e.g., Okamura Figure 3].

16. Claims 4, 5, 12, and 16 are rejected under 35 USC 103 as being unpatentable over the combination of Guter and Okamura and Schwenk as applied above with respect to independent claim 1, and further in view of USPN 6,741,727 ("Hirasawa").

Regarding claim 4, which depends from claim 1, the combination of Guter and Okamura fails to expressly disclose performing a broadband evaluation of the spectral distribution of the integrated luminescence measuring.

Hirasawa, on the other and, does disclose an evaluation unit which arranged to carry out a broadband evaluation of the spectral distribution of the integrated luminescence measuring [See Hirasawa col. 5 line 55 - col. 6 line 35, which describes carrying out a broadband evaluation of the spectral distribution of measured luminescence values.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Guter by adding an evaluation of the spectral distribution of measured luminescence values. Such a modification would have allowed for an additional way of determining characteristics of a document of value.

Regarding claim 5, which depends from claim 1, all of the limitations are discussed in the above discussion with respect to claim 4.

Regarding claim 12, which depends from claim 1, the combination of Guter and Okamura discloses a sensor device that carries out a value measurement integration operation along a track direction. The combination of Guter and Okamura, however, fails to expressly disclose that the integration is of spectral values.

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Hirasawa, on the other hand, discloses using infrared radiation to measure the reflectance values and thus discloses making the determination on the basis of spectral characteristics [See Hirasawa col. 5 line 40 - col. 7 line 20 & col. 10 lines 20-35].

Regarding claim 16, Hirasawa discloses performing an evaluation in a wavelength range over 800nm [See Hirasawa col. 5 lines 55-60].

17. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Guter and Okamura and Schwenk as applied above with respect to independent claim 1, and further in view of USPN 6,636,624 ("Rateman").

Notwithstanding the proper rejection of claim 7 in view of the indefiniteness issues raised above and the consequent claim interpretation, this claim, if amended to remove the indefiniteness problem, would still be obvious in view of the aforesaid combination. Rateman discloses measuring tracks which are parallel to the transport direction of the document [See Figures 1(a)-1(c) of Rateman and the accompanying description]. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination of Guter and Okamura by adding in that the measuring tracks are parallel to the transport direction as taught by Rateman. Such a modification would have allowed for the documents to be transported in either direction, which makes a more robust document-checking system.

18. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Guter and Okamura and Schwenk as applied above with respect to independent claim 1, and further in view of EP 0 744 716 A2 ("Cummings").

The combination of Guter and Okamura fails to expressly disclose using a plurality of sensors, with each sensor being adapted to measure one individual track. Cummings, on the other hand, discloses this limitation [See Cummings col. 2, lines 16-30].

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination of Guter and Okamura by adding plural sensors corresponding to plural tracks as taught by Cummings. Such a modification would have allowed for a faster document checking system in that different areas of the document could be sensed simultaneously.

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19. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Guter and Okamura and Schwenk as applied above with respect to independent claim 1, and further in view of GB 2122743A ("Bergstrom").

The combination of Guter and Okamura fail to expressly disclose a spatially-resolved evaluation of the integrated luminescence measuring. Bergstrom, on the other hand, explicitly describes a spatially-resolved evaluation (see Bergstrom pg. 2, lines 66-105).

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination of Guter and Okamura by performing a spatially-resolved evaluation as taught by Bergstrom. Such a modification would have allowed a well-known method of checking a document of value.

20. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Guter and Okamura and Schwenk as applied above with respect to independent claim 1, and further in view of USPN 5,652,802 to Graves et al. ("Graves").

Both claims 8 and 9 disclose that the measuring tracks are overlapping. This feature is not expressly disclosed in the aforesaid combination of Guter, Okamura, and Schwenk, but is expressly described at, for example, col. 12 lines 50-62 of Graves. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination of Guter, Okamura, and Schwenk by having the measuring tracks overlap as taught by Graves. Such a modification would have allowed for the scanning operation to cover more surface area of the bank note.

21. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Guter, Okamura, and Schwenk as applied above with respect to claim 1 and further in view of USPN 4,451,521 to Kaule et al. ("Kaule").

The aforesaid combination fails to expressly disclose an evaluation unit that measures in the range of over 1000 nanometers. Kaule on the other hand, does disclose this feature. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the aforesaid combination to include measuring infrared wavelengths as taught by Kaule. Such a modification would have allowed for conspicuous advantages in detecting the authenticity of banknotes with certain combinations of paper and ink (See Kaule col. 5 lines 56-67).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure..

- USPN 6,937,322 ("Gerz") – discloses overlapping measuring tracks.
- USPN 6,363,164 ("Jones et al.") – discloses overlapping measuring tracks.

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick L. Edwards whose telephone number is 571-272-5371. The examiner can normally be reached on M-F, 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Primary Patent Examiner, Art Unit 2624